

ABSTRACT

The invention is directed generally to the structure of prenyltransferases,
5 particularly undecaprenyl pyrophosphate synthase, an enzyme important in bacterial
cell wall synthesis. The invention relates to the crystal structure of undecaprenyl
pyrophosphate synthase from *Streptococcus pneumoniae* and its interaction with
cofactors and ligands. The invention also relates to the structure of ligand and
cofactor binding sites of undecaprenyl pyrophosphate synthase.